S3 Vector Model Instruction Manual

1. Product technical indicators and specifications

Input	Rated voltage, frequency	Three-phase (4T series) 380V; 50/60HZ three-phase (2T series) 220V: 50/60HZ	
	Voltage allowable range:	Three-phase (4T series) 320V ~ 460V Three-phase (2T series) 190V ~ 250V	
Output	Voltage	4T series; 0 ~380V 2T series; 0 ~220V	
	frequency	V/F control, simple vector control: 0.0ÿ999.9HZ Advanced vector control, torque control: 0.5ÿ300.0HZ	
	Overload capacity	110% long term 150% 1 minute 180% 5 seconds	
Control method		V/F control, simple vector control, advanced vector control, torque control	
Control characteristics	Frequency setting resolution	Analog input	0.1% of the maximum output frequency
		Digital settings	0.1HZ
	Frequency accuracy	Analog input	The maximum output frequency is within 0.2% and
		Digital input	the output frequency is within 0.01%. There are three
	V/F control	V/F curve (voltage-frequency characteristics)	ways: the first is the linear torque characteristic curve, the second is the square torque characteristic curve. Characteristic curve, the third is the user-set V/F curve
		Torque boost	Manual setting: 0.0ÿ30.0% of rated output Automatic boost: Automatically determine the boost torque based on the output current and motor parameters
		Automatic current and pressure limiting	Whether in acceleration, deceleration or stable operation, the motor stator is automatically detected The current and voltage are suppressed within the allowable range according to the unique algorithm. Minimize the possibility of system fault tripping
	Sensorless vector control	Voltage-frequency characteristics	Automatically adjust the output voltage-frequency ratio according to motor parameters and unique algorithm
		Torque characteristics	Starting torque: 100% rated torque at 5.0Hz (VF control) 150% rated torque at 1.0Hz (vector control)
		Current and voltage suppression	Full current closed-loop control, completely avoid current shock, with perfect over-current protection Pressure suppression function
	Undervoltage suppression during operation	Especially for users with low grid voltage or grid voltage that fluctuates frequently, the system It can also maintain the longest possible running time based on unique algorithms and residual energy allocation strategies	
functions	Multi-speed operation	7 stage programmable multi-speed control, multiple operation modes are optional are optional.	
	PID control RS485 communication	Built-in PID controller (frequency can be preset). Standard configuration RS485 communication function, multiple communication protocols are optional, with Linkage synchronous control function	
	Frequency setting	Analog Input	DC voltage 0~10V, DC current 0~20mA (upper and lower limits are optional)
		Digital Input	Operation panel setting, RS485 interface setting, UP/DOWN terminal control, can also be Various combinations with analog input
	Output signal	Relay output	1 relay output (TA, TC), up to 17 meaning options
		Analog Output	1 analog signal output, output range is 0~20mA or 0~10V Flexible setting can realize the output of physical quantities such as set frequency and output frequency
	Automatic voltage stabilization operation	can choose dynamic voltage stabilization, static voltage stabilization and non-stabilization according to the needs to obtain the most stable operation effect	
	Acceleration and deceleration time setting	0.1S ~999.9min continuously adjustable	
	Braking / energy braking	The starting voltage, hysteresis voltage and braking rate of dynamic braking can be adjusted continuously	

		DC braking	DC braking start frequency at shutdown: 0.00~[F0.05] upper limit frequency Braking time: 0.0~30.0s; Braking current: 0.0%~50.0% of motor rated voltage
	Low noise operation Carrier frequency 2.0KHZ ~ 20.0KHZ continuously adjustable to minimize motor noise		
	counter		One internal counter for easy system integration
	Run function		upper and lower frequency limit settings, frequency jump operation, reverse operation limit, slip frequency compensation, RS485 communication, frequency Incremental and decremental control, fault self-recovery operation, etc.

show	operating surface Board Display	Running status	Output frequency, output current, output voltage, motor speed, set frequency, module temperature, PID setting, Feedback, analog input and output, etc.
		Alarm content	Records of multiple operating parameters such as output frequency, set frequency, output current, output voltage, DC voltage, module temperature, etc. at the time of the most recent fault
Protection function			Overcurrent, overvoltage, undervoltage, module failure, electronic thermal relay, overheating, short circuit, internal memory failure, etc.
environment	Ambient temperature		-10˚C~+40˚C (When the ambient temperature is 40˚C~50˚C, please derate the usage)
	Ambient humidity		5%~95%RH, no condensation
	Surrounding environment		Indoors (no direct sunlight, no corrosion, no flammable gas, no oil mist, no dust, etc.)
	altitude		The rated value should be derated for every 1000 meters above the rated value.
structure	Protection level		IP20
	Cooling method		Air cooling, with fan control
Installation			Wall-mounted, cabinet-mounted

2. Installation and wiring of inverter

2.1 Installation Notes

Danger

1. Before wiring, ensure that the input power is off.
Risk of electric shock and fire.

2. Only electrical engineers should perform wiring work.
Risk of electric shock and fire.

3. Ensure the ground terminal is securely grounded.
(380V class: especially Type 3 grounding)

Risk of electric shock and fire.

4. After connecting the emergency stop terminal, ensure that it operates effectively.
Risk of injury. (Wiring is the responsibility of the user.)

5. Do not touch the output terminals directly. The inverter's output terminals are directly connected to the motor. Do not short-circuit the output terminals.
Risk of electric shock and short circuit.

6. Ensure that the terminal cover is installed before applying power. When removing the cover, always disconnect the power supply.
Risk of electric shock.

7. After disconnecting the power supply, wait 5 to 8 minutes for the remaining charge in the unit to be fully discharged before performing inspection and maintenance.
Risk of residual voltage in the electrolytic capacitor. 8. Do not perform inspection and maintenance work unless you are a qualified technician.
There is a risk of electric shock.

Notice

1. Confirm that the incoming power voltage matches the rated input voltage of the inverter.
Risk of injury and fire.

2. Connect the braking resistor or brake unit according to the wiring diagram.
Risk of fire.

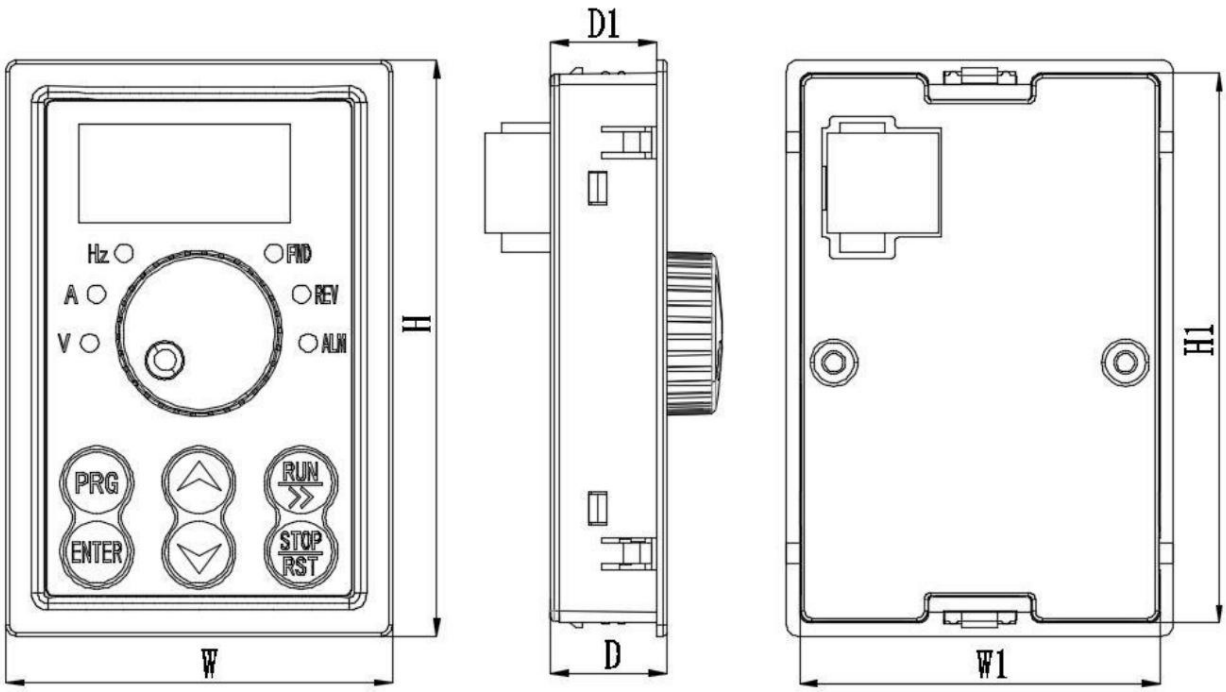
3. It is best to use a screwdriver or wrench with the specified torque to tighten the terminals.
Risk of fire.

4. Do not connect the input power cable to the output terminals U, V, or W.
Applying voltage to the output terminals can cause internal damage to the inverter.

5. Do not remove the front panel cover; only remove the terminal cover when wiring.
This may cause internal damage to the inverter.

2.2 Appearance

a. External keyboard base size



The opening size of the keyboard base

Keyboard thickness

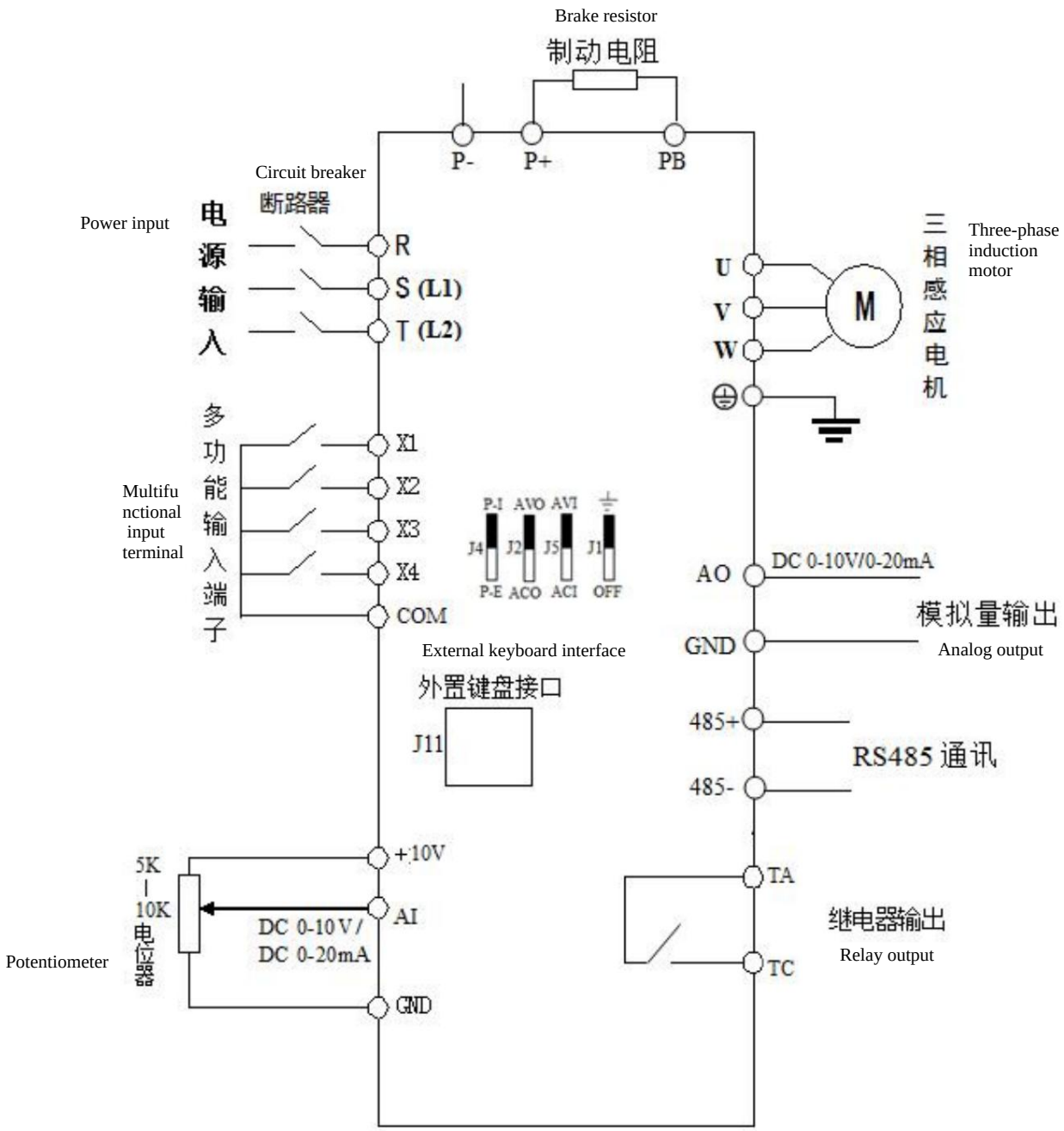
键盘底座开孔尺寸				键盘厚度	
W	W1	H	H1	D	D1
53mm	49.4mm	79mm	75.4mm	15.9mm	14.5mm

b. Overall dimensions of the machine

model	H2 (mm)	W1 (mm)	H (mm)	H1 (mm)	W (mm)	D (mm)	Mounting holes (mm)
	Installation dimension		External dimensions				
0.4KW-2.2KW	136.5	63	147	142	72	118.4	4
3.7KW-5.5KW	172.5	78	185	182	87	138	4

2.3 Basic operation wiring

The inverter wiring part is divided into the main circuit and the control circuit. The user can open the cover of the output/input terminal to see the main circuit terminals and the control circuit.Terminals, users must connect correctly according to the wiring circuit diagram below.



2.4 Control circuit terminals

10V	GND	AI	AO	485+	485-	X1	X2	X3	X4	COM	TA	TC

2.5 **0.4KW-2.2KW** main circuit terminal

R	S/L1	T/L2	U	V	W	⏚

2.6 **3.7KW-5.5KW** main circuit terminal

R	S	T	P+	PB	U	V	W	⏚

2.7 Main Control Board Jumper Description

J1	
files	Indicates that the main control board is grounded.
OFF	means the main control board is disconnected from the ground (disconnected by default)
J2	
AVO	indicates analog AO output voltage signal, 0-10V
ACO	indicates analog AO output current signal, 0-20mA
J4	
P-I	means to select built-in keyboard potentiometer (default built-in keyboard (Disc potentiometer is effective)
PE	means select external keyboard potentiometer
J5	
AVI	indicates analog AI input voltage signal, 0-10V
ACI	indicates analog AI input current signal, 0-20mA

2.8 Wiring Precautions

•1 When removing or replacing the motor, the inverter input power must be cut off.

•2 The motor can be switched or the industrial frequency power can be switched only when the inverter stops outputting.

•3 In order to minimize the impact of electromagnetic interference, when the electromagnetic contactors and relays used are close to the inverter, you should consider installing a surge absorption device.

•4 Do not connect the AC input power to the inverter output terminals U, V, and W.

•5 The external control line of the inverter needs to be equipped with an isolation device or use shielded wire.

• 6 In addition to shielding, the input command signal connection line should also be routed separately, preferably away from the main circuit wiring.

•7 When the carrier frequency is less than 4KHz, the maximum distance between the inverter and the motor should be within 50 meters. When the carrier frequency is greater than 4KHz, this distance should be appropriately reduced .It is best to lay the wires in metal pipes.

•8 When adding peripheral equipment (filters, reactors, etc.) to the inverter, first measure the insulation resistance to ground with a 1000V megohmmeter to ensure it is no less than 4 megohms.

•9 Do not install phase-leading capacitors or RC absorption devices at the U, V, and W output terminals of the inverter.

•10 If the inverter needs to be started frequently, do not turn off the power supply. Use the COM/RUN control terminal for start and stop operations to avoid damaging the rectifier bridge.

•11 To prevent accidents, ground terminal G must be reliably grounded (ground impedance should be less than 100ý), otherwise leakage may occur.

•12 When wiring the main circuit, please select the wire diameter and specifications in accordance with relevant national electrical regulations.

3. Communication Protocol

1. RTU mode and format

When the controller communicates on the Modbus bus in RTU mode, each 8-bit byte in the information is divided into two 4-bit hexadecimal characters.

The main advantage is that the density of characters transmitted is higher than that of ASCII mode at the same baud rate, and each message must be transmitted continuously .

(1) Format of each byte in RTU mode

Coding system: 8-bit binary, hexadecimal 0-9, AF.

Data bits: 1 start bit, 8 data bits (low bit sent first), 1 stop bit, and optional parity bit. (Refer to the RTU data frame sequence diagram)

Error checking area: Cyclic redundancy check (CRC).

(2) RTU data frame bit sequence diagram

With parity

Start	1	2	3	4	5	6	7	8	Par	Stop

No parity

Start	1	2	3	4	5	6	7	8	Stop

2. Read and write function code description:

Function code	Functional Description
03	Read register
06	Write register

3. Register address

Register function	address
control command	2000H
input monitoring parameter reading (d-00 ~ d-31)	1000Hÿ001FH
Communication frequency setting	2001H
User parameter settings (F0.00~F8.06)	0000Hÿ0806H
Factory parameter settings (F9.00~F9.10)	0900Hÿ090AH

4. Parameter address description of communication protocol:

Functional Description	Address Definition	Data meaning	R/W
Communication control commands	2000H	0001H: Shutdown	W
		0012H: Forward operation	
		0013H: Forward jog operation	
		0022H: Reverse operation	
		0023H: Reverse jog operation	
Communication setting frequency address	2001H	The communication setting frequency range is -10000 to 10000. Note: The communication setting frequency is a percentage relative to the maximum frequency. The range is -100.00% to 100.00%).	W
Communication control commands	2002H	0001H: External fault input	W
		0002H: Fault reset	
Read the run/stop parameter description	2102H	Set frequency (two decimal places)	R
	2103H	Output frequency (two decimal	R
	2104H	places) Output current (one decimal place)	R
	2105H	Bus voltage (one decimal place)	R
	2106H	Output voltage (one decimal place)	R
	2107H	Analog input AI (two decimal places)	R
	2108H	Reserved	R
	2109H	Current count value	R
	210AH	Motor speed	R
	210BH	Analog output AO (two decimal places)	R
	210CH	Reserved	R
	210DH	Inverter temperature (one decimal place)	R

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	210EH	PID feedback value (two decimal places)	R
	210FH	PID setting value (two decimal places)	R
	2110H	Reserved	R
	2111H	Pulse input frequency	R
	2112H	Current fault	R
	2113H	Current timing value	R
	2114H	Input terminal status	R
	2115H	Output terminal status	R
	2116H	BIT0: Run/Stop BIT1: forward/reverse BIT2: Inching BIT3: DC braking BIT4: Reserved BIT5: Overvoltage limit BIT6: Constant speed reduction BIT7: Overcurrent limit BIT8~9: 00-zero speed/01-acceleration/10-deceleration/11-constant speed BIT10: Overload pre-alarm BIT11: Reserved BIT12~13 operation command channel: 00-panel/01-terminal/10-communication BIT14~15 bus voltage status: 00-normal/01-low voltage protection/10-overvoltage protection	R
	2101H	Bit0: Run Bit1: Shutdown Bit2: Jog Bit3: Forward Bit4: Reverse Bit5 to Bit7: Reserved Bit8: Communication setting Bit9: Analog signal input Bit10: Communication operation command channel Bit11: Parameter lock Bit12: Running Bit13: Jog command Bit14 to Bit15: Reserved	R
Reading fault code instructions	2100H	00: No abnormality 01: Module failure 02: Overvoltage 03: Temperature failure 04: Inverter overload 05: Motor overload 06: External fault 07-09: Reserved 10: Overcurrent during acceleration 11: Overcurrent during deceleration 12: Overcurrent at constant speed 13: Reserved	R

		14: Undervoltage 15: Reserved 16: RS485 communication failure 17: Pipe burst failure 18: Reserved 19: Dual CPU communication failure 20: Reserved 21: Reserved 22: Current detection fault 23: Reserved 24: Reserved 25: Output phase loss	

5.03 Read function mode:

Inquiry information frame format (sending frame):

Address	01H
Function	03H
Starting data address	21H
	02H
Data(2Byte)	00H
	02H
CRC CHK Low	6FH
CRC CHK High	F7H

Data analysis of this section:

01H is the inverter address

03H is the read function code

2102H is the starting address

0002H is the number of read addresses, and 2102H and 2103H

F76FH is the 16-bit CRC check code

Response information frame format (return frame):

Address	01H
Function	03H
DataNum*2	04H
Data1[2Byte]	17H
	70H
Data2[2Byte]	00H
	00H
CRC CHK Low	FEH

CRC CHK High	5CH

Data analysis of this section:

01H is the inverter address

03H is the read function code

04H is the product of read item*2

1770H is the data to read 2102H (set frequency)

0000H is the data to read 2103H (output frequency)5CFEH is a 16-bit CRC check code

6. 06H write function mode

Inquiry information frame format (sending frame):

Address	01H
Function	06H
Starting data address	20H
	00H
Data(2Byte)	00H
	01H
CRC CHK Low	43H
CRC CHK High	CAH

Data analysis of this section:

01H is the inverter address

06H is the write function code

2000H is the control command address

0001H is the stop command

43CAH is the 16-bit CRC check code

Response information frame format (return frame):

Address	01H
Function	06H
Starting data address	20H
	00H
Number of Data (Byte)	00H
	01H
CRC CHK Low	43H
CRC CHK High	CAH

This section of data analysis: If the settings are correct, the same input data is returned.

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4. Exception handling

When the inverter is running, common abnormal phenomena and countermeasures are shown in Table 4-2:

Abnormal phenomenon		Possible causes and solutions
The motor does not rotate	Keyboard no display	Check whether there is a power outage, whether the input power is missing a phase, and whether the input power line is connected incorrectly.
	The keyboard has no display, but the charging indicator light is on.	Check whether there are any problems with the wiring and sockets related to the keyboard, and measure the voltage of each control power supply in the machine to confirm whether the switching power supply is working properly. If the switching power supply is not working properly, check whether the switching power supply input line (+, -) sockets are properly connected, whether the oscillator is damaged, or whether the voltage regulator tube is normal.
	The motor is humming.	The motor is too heavily loaded. Try to reduce the load.
	No abnormalities found	Check whether the inverter is in a tripped state or has not been reset after a trip, whether it is in a power-off restart state, whether the keyboard has been reset, and whether it is in program operation, multi-speed operation, a specific operation state, or non-operational state. You can try restoring the factory settings.
		Verify that a run command has been issued.
		Check whether the operating frequency is set to 0.
The motor cannot accelerate or decelerate smoothly		The acceleration and deceleration times are not set appropriately. Increase them.
		The current limit is too small. Increase the limit.
		Overvoltage protection is activated during deceleration. Increase the deceleration time.
		The carrier frequency is not set appropriately. The load is too heavy or oscillation occurs.
		The load is too heavy and the torque is insufficient. In V/F mode, increase the torque boost value. If the requirements are still not met, switch to simple vector control. Ensure that the motor parameters are consistent with the actual values. If the requirements are still not met, it is recommended to switch to advanced vector control. Again, ensure that the motor parameters are consistent with the actual values. It is also recommended to perform motor parameter tuning.
		The motor power does not match the inverter power. Set the motor parameters to the actual values.
		Please change the torque boost mode to manual boost mode. The upper and lower frequency limits are not set properly.
The motor can rotate but cannot adjust the speed		The frequency setting is too low, or the frequency gain setting is too small. Check whether the speed control mode used is consistent with the set frequency setting.
		Check whether the load is too heavy, whether it is in overvoltage stall or overcurrent limiting state. The load fluctuates frequently, and its changes should be minimized. The
The motor speed changes during operation		inverter and motor ratings are seriously inconsistent. Please set the motor parameters to actual values. The frequency setting potentiometer has poor contact or the
		frequency setting signal fluctuates. Change to digital frequency setting mode or increase the filter time constant of the analog input signal. Adjust the phase sequence of the output terminals U, V, and W. Set the running direction (F0.12=1) to reverse to output the
The motor rotates in the opposite direction		direction uncertainty caused by phase loss. Please check the motor wiring immediately.

Table 4-2 Common abnormal phenomena and countermeasures

5. Parameter Description

○—Parameters that can be modified in any state ×—Parameters that cannot be modified in the running state ◆—Actual detection parameters, cannot be modified ◇—Factory parameters, limited to manufacturer modification, users are prohibited from modifying

F0 Group - Basic Operating Parameters

Function code	name	content	Setting range	Factory setting	change
F0.00	function macro definition	0: General mode 1: Single pump constant pressure water supply mode 2-3: Reserved 4: Engraving machine mode 5-10: Reserved	0 ~10	0	×

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F0.01 Motor control mode		0: VF control 1: Advanced VF control 2: Simple vector control 3: Advanced vector control 4: Torque control	0~4	0	×
F0.02	Run command channel choose	0: Panel operation command channel 1: Terminal operation command channel 2: Communication operation command channel	0~2	0	O
F0.03 Frequency setting selection		0: Panel potentiometer 1: Digital setting 1, adjustment by ▲and ▼ keys on the operation panel 2: Digital setting 2, terminal UP/DOWN adjustment 3: AI analog setting (0~10V/0~20mA) 4: Combined given 5: Keep 6: Communication setting 7: Reserved Note: When combined reference is selected, the combined reference mode is selected in F1.15.	0~7	0	O
F0.04 Maximum output frequency		The maximum output frequency is the highest frequency that the inverter is allowed to output. The benchmark for speed setting.	MAX{50.0, 【F0.05】} ～999.9Hz	50.0Hz	×
F0.05 Upper limit frequency		The operating frequency cannot exceed this frequency	MAX{0.1, 【F0.06】}～【F0.04】	50.0Hz	×
F0.06	Lower frequency limit	The operating frequency cannot be lower than this frequency	0.0~Upper frequency	0.0Hz	×
F0.07	Lower frequency limit reached deal with	0: Zero speed operation 1: Run at the lower frequency limit 2: Shutdown	0~2	0	×
F0.08	Operating frequency digital set up	This setting value is the initial value of the frequency digital setting	0.0~Upper frequency	10.0Hz	O
F0.09 Digital frequency control		LED units digit: power-off storage 0: Storage 1: Do not store LED tens digit: stop hold 0: Keep 1: Do not maintain LED hundreds place: UP/DOWN negative frequency adjustment 0: Invalid 1: Valid LED thousands digit: PID, PLC frequency superposition selection 0: Invalid 1: F0.03+PID 2: F0.03+PLC	0000~2111	0000 •	O
F0.10	Acceleration time	The time required for the inverter to accelerate from zero frequency to the maximum output frequency	0.1~999.9S 0.4~4.0KW	Model settings	O

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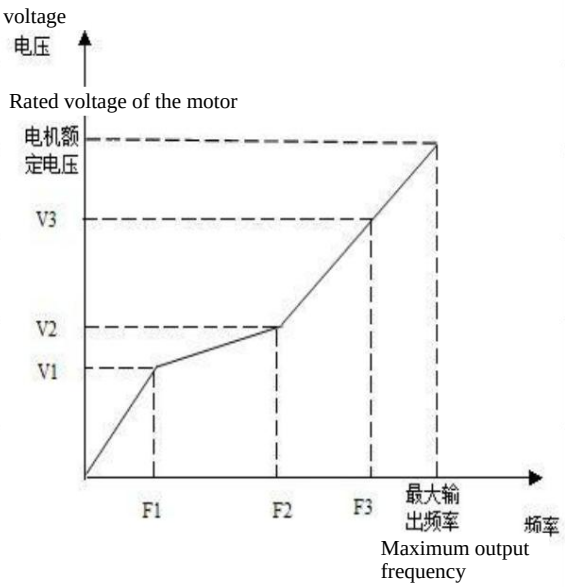
F0.11	Deceleration time	The time required for the inverter to decelerate from the maximum output frequency to zero frequency	7.5S 5.5~7.5KW 15.0S		
F0.12	Running direction setting	0: Forward 1: Reverse 2: Disable reverse	0~2	0	O
F0.13	V/F curve setting	0: Linear curve 1: Square curve 2: Multi-point VF curve	0~2	0	×
F0.14	Torque boost	Manual torque boost, this setting is relative to the rated voltage of the motor. percentage	0.0~30.0%	Model settings	O
F0.15	Torque boost cutoff frequency	This setting is the cut-off frequency point for manual torque boost.	0.0~50.0Hz	15.0Hz	×
F0.16	Carrier frequency setting	For situations where silent operation is required, the carrier frequency can be appropriately increased to However, increasing the carrier frequency will increase the heat generated by the inverter.	2.0~16.0KHz 0.4~3.0KW 4.0KHz 4.0~7.5KW 3.0KHz	Model settings	×
F0.17	V/F frequency value F1		0.1~Frequency value F2	12.5Hz	×
F0.18	V/F voltage value V1		0.0 ~Voltage value V2	25.0%	×
F0.19	V/F frequency value F2		Frequency value F1~Frequency value F3	25.0Hz	×
F0.20	V/F voltage value V2		Voltage value V1~voltage value V3	50.0%	×
F0.21	V/F frequency value F3		Frequency value F2~motor rated Fixed frequency F4.03	37.5Hz	×
F0.22	V/F voltage value V3		Voltage value V2 ~ 100.0%*Uoute(electricity Rated voltage F4.00	75.0%	×
F0.23	User password	To set any non-zero number, you need to wait for 3 minutes or power off. Take effect.	0~9999	0	O
F0.24	Frequency display resolution Rate Selection	0: 0.1Hz 1: 1Hz Note: When setting this parameter, be sure to check the maximum output frequency (F0.04), frequency upper limit (F0.05), motor rated frequency (F4.03) and other frequency-related parameters.	0~1	0	O
F1 Group-Auxiliary Operation Parameters					
Function code	name	Setting range	Minimum unit	Factory settings	changed

F1.00 Starting mode		LED units digit: starting mode 0: Start from starting frequency 1: DC braking first and then starting from the starting frequency 2: Keep LED tens digit: restart mode in case of power failure or abnormality 0: Invalid 1: Start from starting frequency LED hundreds place: reserved LED thousands digit: reserved	0000~0012	00	×
F1.01 Starting frequency		输出频率 output frequency 时间 time 输出电流（有效值） Output current (effective value) DC brake 直流制动量 直流制动时间 时间 time Run the command 运行命令	0.0~50.0Hz	1.0Hz	O
f/1.02	Starting DC braking Voltage		0.0~50.0% × Electric Rated voltage	0.0%	O
f/1.03	Starting DC braking time		0.0~30.0s	0.0s	O
F1.04 Stop mode		0: Deceleration to stop 1: Free stop	0~1	0	×
f/1.05	DC braking at shutdown Starting frequency	输出频率 Output frequency 停机制动起始频率 输出电流（有效值） Output current (effective value) 停机制动等待时间 直流制动量 停机制动时间 Run the command 运行命令	0.0~Upper frequency	0.0Hz	O
f/1.06	DC braking at shutdown Voltage		0.0~50.0%×electricity Rated voltage	0.0%	O
f/1.07	DC braking at shutdown time		0.0~30.0s	0.0s	×
f/1.08	DC braking at shutdown Waiting time		0.00~99.99s	0.00s	×
f/1.09	Forward jog frequency Set	Set the forward and reverse frequency of jog	0.0~50.0Hz	10.0Hz	O
f/1.10	the reverse jog frequency set up				
F1.11 Jog acceleration time		Set the jog acceleration and deceleration time	0.1~999.9S 0.4~4.0KW 10.0S 5.5~7.5KW 15.0S	Model settings	O
F1.12 Jog deceleration time					

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F1.13	jump frequency	By setting the jump frequency and range, the inverter can avoid the mechanical resonance point of the load.	0.0~Upper frequency	0.0Hz	O
F1.14	jump range		0.0~10.0Hz	0.0Hz	O
f/1.15	Frequency combination setting method	0: Potentiometer + digital frequency 1 1: Potentiometer + digital frequency 2 2: Potentiometer + AI 3: Digital frequency 1 + AI 4: Digital frequency 2 + AI 5: Digital frequency 1 + multi-speed 6: Digital frequency 2 + multi-speed 7: Potentiometer + multi-speed 8: AI+PLC (same direction superposition) 9: Reserved	0~9	0	×
f/1.16	Programmable operation control (simple PLC operation)	LED units digit: PLC enable control 0: Invalid 1: Valid LED tens digit: Operation mode selection 0: Single cycle 1: Continuous cycle 2: Keep the final value after single cycle LED hundreds place: starting mode 0: restart from the first stage 1: start from the stage at the time of stop (fault) 2: start from the stage and frequency at the time of stop (fault) LED thousands place: Power-off storage selection 0: Not stored 1: Store	0000~1221	0000	×
F1.17	Multi-speed frequency 1	Set the frequency of speed 1	-Upper frequency~Upper	5.0Hz	O
F1.18	Multi-speed frequency 2	Set the frequency of step 2	frequency-Upper frequency~Upper	10.0Hz	O
F1.19	Multi-speed frequency 3	Set the frequency of multi-speed 3	frequency-Upper frequency~Upper	15.0Hz	O
F1.20	Multi-speed frequency 4	Set the frequency of multi-speed 4	frequency-Upper frequency~Upper	20.0Hz	O
F1.21	Multi-speed frequency 5	Set the frequency of speed 5	frequency-Upper frequency~Upper	25.0Hz	O
F1.22	Multi-speed frequency 6	Set the frequency of multi-speed 6	frequency-Upper frequency~Upper	37.5Hz	O
F1.23	Multi-speed frequency 7	Set the frequency of multi-speed 7	frequency-Upper frequency~Upper frequency-Upper frequency~Upper frequency	50.0Hz	O
f/1.24	Phase 1 running time	Set the running time of speed 1 (the unit is selected by [F1.35], the default is	0.0~999.9s	10.0s	O
F1.25	Stage 2	seconds) Set the running time of speed 2 (the unit is selected by [F1.35], the	0.0~999.9s	10.0s	O
f/1.26	Runtime Stage 3	default is seconds) Set the running time of speed 3 (the unit is selected by [F1.35], the	0.0ÿ999.9s	10.0s	O
f/1.27	Runtime Stage 4	default is seconds) Set the running time of speed 4 (the unit is selected by [F1.35], the	0.0~999.9s	10.0s	O
f/1.28	Runtime Stage 5	default is seconds) Set the running time of speed 5 (the unit is selected by [F1.35], the	0.0~999.9s	10.0s	O
f/1.29	Runtime Stage 6	default is seconds) Set the running time of speed 6 (the unit is selected by [F1.35], the	0.0~999.9s	10.0s	O
f/1.30	Runtime Stage 7 Runtime	default is seconds) Set the running time of speed 7 (the unit is selected by [F1.35], the default is seconds)	0.0~999.9s	10.0s	O

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f/1.31	Stage acceleration and deceleration Choose 1	LED units digit: Stage 1 acceleration/deceleration time 0~1 LED tens digit: stage 2 acceleration and deceleration time 0~1 LED hundreds place: stage 3 acceleration and deceleration time 0~1 LED thousands digit: stage 4 acceleration and deceleration time 0~1	0000~1111	0000	O
f/1.32	Stage acceleration and deceleration Choose 2	LED units digit: Stage 5 acceleration and deceleration time 0~1 LED tens digit: stage 6 acceleration and deceleration time 0~1 LED hundreds place: stage 7 acceleration and deceleration time 0~1 LED thousands digit: reserved	000~111	000	O
F1.33	Acceleration time 2	Set acceleration and deceleration time 2	0.1~999.9s 0.4~4.0KW 10.0s 5.5~7.5KW 15.0s	10.0s	O
F1.34	Deceleration time 2				
F1.35 Time unit selection		LED units digit: process PID time unit LED tens digit: simple PLC time unit LED hundreds place: conventional acceleration and deceleration time unit LED thousands digit: reserved 0: The unit is 1 second 1: The unit is 1 point 2: The unit is 0.1 second	000~211	000	×
f/1.36	Forward and reverse dead zone between	The inverter switches from forward operation to reverse operation, or from reverse operation to reverse operation. During the transition to forward operation, the transition waiting at the output zero frequency time.	0.0~999.9s	0.0	O

Group F2 - Analog and digital input and output parameters

Function code	name	Setting range	Change of the minimum unit	factory setting	
F2.00	AI input lower limit voltage	Set AI upper and lower voltage limits	0.00~F2.01	0.00V	O
F2.01	AI input upper limit voltage		F2.01~10.00V	10.00V	O
F2.02	AI lower limit corresponding setting	Set AI upper and lower limit corresponding setting, this setting corresponds to the upper limit frequency The percentage of F0.05	-100.0%~100.0%	0.0%	O
F2.03	AI upper limit corresponding setting			100.0%	O
f/2.04 ~ f/2.07	reserve	-	-	0	◆
f/2.08	Analog input signal filter Wave time constant	This parameter is used to filter the AI and panel potentiometer input signals. to eliminate the effects of interference.	0.1~5.0s	0.1s	O
f/2.09	Analog input anti-shake Difference Limit	When the analog input signal fluctuates frequently around the given value, The frequency fluctuation caused by this fluctuation can be suppressed by setting F2.09 move.	0.00~0.10V	0.00V	O
f/2.10	AO analog output terminal Sub-function selection	0: Output frequency 1: Output current 2: Motor speed 3: Output voltage 4: AI 5: Keep	0~5	0	O
F2.11	AO output lower limit	Set the upper and lower limits of AO output	0.00~10.00V/0.00~20.00mA	0.00V	O
F2.12	AO output upper limit			10.00V	O

F2.13	Input terminal X1 function	0: Control terminal idle 1: Forward jog control 2: Reverse jog control 3: Forward control (FWD) 4: Reverse control (REV) 5: Three-wire operation control 6: Coast to stop control 7: External stop signal input (STOP) 8: External reset signal input (RST) 9: External fault normally open input 10: Frequency increase command (UP) 11: Frequency decrease command (DOWN) 13: Multi-step speed selection S1 14: Multi-step speed selection S2 15: Multi-step speed selection S3 16: Run command channel forced to terminal 17: Run command channel forced to communication 18: Stop DC braking command 19: Frequency switch to AI 20: Frequency switch to digital frequency 1 21: Frequency switch to digital frequency 2 22: Reserved 23: Counter clear signal 24: Counter trigger signal 25: Timer clear signal 26: Timer trigger signal 27: Acceleration/deceleration time selection 28: Swing pause (stop at current frequency) 29: Swing frequency reset (return to center frequency) 30: External stop/reset signal input (STOP/RST) 30~60: Reserved	0~60	3	×
F2.14	Input terminal X2 function		0~60	4	×
F2.15	Input terminal X3 function		0~60	0	×
F2.16	Input terminal X4 function		0~60	0	×
F2.17	Reserved		-	0	×
F2.18	FWD/REV terminal control mode	0: Two-wire control mode 1 1: Two-wire control mode 2 2: Three-wire control mode 1 3: Three-wire control mode 2 4: Three-wire control mode 3 5: Reserved	0~5	0	×
F2.19	Terminal function at power on Detection selection	0: The terminal operation command is invalid when power is turned on. 1: The terminal operation command is valid when power is turned on.	0~1	0	×
F2.20	R output setting	0: Idle 1: The inverter is ready for operation 2: The inverter is running 3: The inverter is running at zero speed 4: External fault shutdown 5: Inverter fault 6: Frequency/speed arrival signal (FAR) 7: Frequency/speed level detection signal (FDT) 8: Output frequency reaches upper limit 9: Output frequency reaches the lower limit 10: Inverter overload pre-alarm 11: Timer overflow signal 12: Counter detection signal 13: Counter reset signal 14: Auxiliary motor	0~20	5	O
F2.21	Reserved		-	0	O

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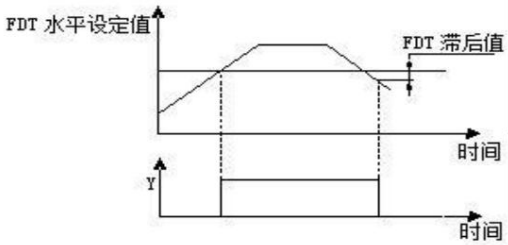
		15: Forward 16: Reversal 17: Output indication signal when output frequency drops to speed detection level number 18-20: Reserved			
F2.22	R closing delay	Delay from relay R state change to output change 0.0ÿ255.0s		0.0s	×
F2.23	R disconnection delay				
F2.24	Frequency arrival FAR detection Amplitude	The output frequency is within the positive and negative detection width of the set frequency. Outputs a valid signal (low level).	0.0Hz~15.0Hz	5.0Hz	O
F2.25	FDT level setting value		0.0Hz~upper frequency	10.0Hz	O
F2.26	FDT hysteresis value		0.0~30.0Hz	1.0Hz	O
F2.27	UP/DOWN terminal repair Change rate	This function code is used to set the frequency when the UP/DOWN terminal is used to set the frequency. Modify the rate, that is, short-circuit the UP/DOWN terminal and the COM terminal for one second. The magnitude of the frequency change.	0.1Hz~99.9Hz/s	1.0Hz/s	O
F2.28	Input terminal pulse contact Sending mode setting (X1ÿ x4)	0: Indicates level trigger mode 1: Indicates pulse trigger mode Note: X1~X4 correspond to 1H, 2H, 4H, and 8H in hexadecimal.	0~FH	0	O
F2.29	Input terminal valid logic Edit settings (X1~X4)	0: indicates positive logic, that is, the Xi terminal is connected to the common terminal, and disconnected invalid 1: Indicates reverse logic, that is, the connection between Xi terminal and common terminal is invalid, disconnect efficient Note: X1~X4 correspond to 1H, 2H, 4H, and 8H in hexadecimal.	0~FH	0	O
F2.30	X1 filter coefficient	Used to set the sensitivity of the input terminal. If the device is disturbed and causes malfunction, this parameter can be increased. The interference capability is enhanced, but setting it too high will cause the sensitivity of the input terminal to Reduced sensitivity. 1: represents 2MS scanning time unit	0~9999	5	O
F2.31	X2 filter coefficient		0~9999	5	O
F2.32	X3 filter coefficient		0~9999	5	O
F2.33	X4 filter coefficient		0~9999	5	O
F2.34	Reserved		-	0	O
F3 Group - PID Parameters					
Function code	name	Setting range	Minimum unit	Factory settings	changed

F3.00 PID function setting	LED units digit: PID adjustment characteristics 0: Invalid 1: Positive effect When the feedback signal is greater than the given value of PID, the inverter is required to output The frequency decreases (i.e., the feedback signal is reduced). 2: Negative effects When the feedback signal is greater than the given value of PID, the inverter is required to output The frequency increases (i.e., the feedback signal decreases). LED tens place: PID given quantity input channel 0: Keyboard potentiometer The PID given value is given by the potentiometer on the operation panel. 1: Digital given The PID given value is given by digital and is set by function code F3.01. 2: Pressure setting (MPa, Kg) Set the pressure by setting F3.01 and F3.18. LED hundreds place: PID feedback input channel 0: AI 1: Reserved LED thousands digit: PID sleep selection 0: Invalid 1: Normal sleep This method requires setting specific parameters such as F3.10~F3.13. 2: Disturbance sleep Same as the parameter setting when sleep mode is selected as 0. When the feedback value is within the range of the F3.14 setting value, the sleep delay is maintained. After a certain time, the system enters disturbed sleep. The feedback value is less than the awakening threshold. (PID polarity is positive characteristic), wake up immediately.	0000~2122	1010	×
F3.01	Digital setting of given quantity	Use the operation keyboard to set the given amount of PID control. When the digital setting is selected for the setting channel (the tens place of F3.00 is 1 or 2), this function If the tens place of F3.00 is 2, it is used as pressure reference. The unit of the parameter is consistent with F3.18.	0.0~100.0%	0.0%	O
F3.02	Feedback channel gain	When the feedback channel is inconsistent with the set channel level, this function can be used Able to adjust the gain of the feedback channel signal.	0.01~10.00	1.00	O
F3.03	Proportional gain P	The speed of PID regulation is determined by the proportional gain and integral time. If the adjustment speed is fast, it is necessary to increase the Proportional gain, reduce the integral time, if the adjustment speed is slow, it is necessary to reduce the proportional gain and increase the integral time. The time division is not set.	0.01~5.00	2.00	O
F3.04	Integration time Ti		0.1~50.0s	1.0s	O
F3.05	Differential time Td		0.1~10.0s	0.0s	O
F3.06	Sampling period T	The longer the sampling period, the slower the response, but the better the suppression of interference signals. The better the effect, the less you need to set it in general.	0.1~10.0s	0.0s	O
F3.07 Deviation limit		The deviation limit is the absolute value of the deviation between the system feedback and the given value. The ratio of the given value to the given value is as follows: PID adjustment does not work.	0.0~20.0%	0.0%	O
F3.08 Closed loop preset frequency		The frequency and running time of the inverter before PID is put into operation	0.0~upper limit frequency	0.0Hz	O

F3.09	When the preset frequency is maintained between		0.0~999.9s	0.0s	×
F3.10	Wake-up threshold coefficient	If the actual feedback value is greater than the set value, and the inverter output When the frequency reaches the lower limit frequency, the inverter passes F3.12 After the defined delay waiting time, it enters the sleep state (i.e. zero rotation The value is the percentage of the PID set value.	0.0~150.0%	100.0%	O
F3.11	Wake-up threshold coefficient	If the actual feedback value is less than the set value, the inverter will After the delay waiting time defined by F3.13, it will exit the sleep state and start The value is the percentage of the PID setting value.	0.0~150.0%	90.0%	O
F3.12	Sleep delay time	Set the sleep delay time	0.0~999.9s 0.	100.0s	O
F3.13	Wake-up delay time	Set the wake-up delay time	0~999.9s	1.0s	O
F3.14	Falling asleep Feedback and set pressure deviation	This function parameter is only valid for disturbance sleep mode	0.0~10.0%	0.5%	O
F3.15	Burst detection delay between	Set the burst detection delay time	0.0~130.0s	0.0S	O
F3.16	High pressure detection threshold	When the feedback pressure is greater than or equal to this set value, the F3.15 burst delay The burst pipe fault "EPA0" is reported later. When the feedback pressure is lower than this setting The pipe burst fault "EPA0" is automatically reset when the threshold is set. Percentage of pressure.	0.0~200.0%	150.0%	O
F3.17	Low voltage detection threshold	When the feedback pressure is less than the set value, the alarm will be triggered after the F3.15 burst delay. Pipe burst fault "EPA0", when the feedback pressure is greater than or equal to this setting The pipe burst fault "EPA0" is automatically reset when the threshold is set. Percentage of pressure.	0.0~200.0%	50.0%	O
F3.18	Sensor range	sets the maximum range of the sensor	0.00~99.99 (MPa,Kg)	10.00MPa	O

F4 Group - Advanced Function Parameters

Function code	name	Setting range	Change of the minimum unit factory setting		
F4.00	Motor rated power	Motor parameter settings	0.0~2000.0KW	model setting	×
F4.01	Motor rated voltage		0~500V~380V 0~250V~220V	Model settings	×
F4.02	Motor rated current		0.1~999.9A	Model settings	×
F4.03	Motor rated frequency		1.0~999.9Hz	50.0Hz	×
F4.04	Motor rated speed		0~9999RPM	Model settings	×
F4.05	Motor no-load current	Set the motor no-load current 0:	0.1A~F4.01	Model setting	×
F4.06	AVR function	Invalid 1: Valid throughout 2: Invalid only during deceleration	0~2	0	×
F4.07	Cooling fan control	0: Automatic control mode 1: The system keeps running during power-on	0~1	0	O
F4.08	Fault automatic reset times number	When the fault reset times are set to 0, there is no automatic reset function and only manual reset is possible. Automatic reset, 10 means unlimited times.	0~10	0	×
F4.09	Fault automatic reset room Interval	Set the fault automatic reset interval	0.5~25.0s	3.0s	×
F4.10	Dynamic braking starting voltage pressure	If the DC side voltage inside the inverter is higher than the dynamic braking starting voltage If a braking resistor is connected at this time, the built-in braking unit will be activated.	330~380/660~ 800V	350/780V	O
F4.11	Dynamic braking action ratio	The voltage energy inside the inverter will be released through the braking resistor.	10~100%	100%	O

	example	amount, causing the DC voltage to drop.			
F4.12	Overmodulation function selection	0: Invalid 1: Valid	0~1	0	×
F4.13	PWM mode	0: Full frequency seven segments 1: Full frequency five bands 2: Seven segments to five segments 3: Single-phase asynchronous motor	0~3	0	×
F4.14	Slip compensation coefficient	When the asynchronous motor is loaded, the speed will drop, so slip compensation is used. The motor speed can be made close to its synchronous speed, thereby making the motor speed Higher control accuracy. This coefficient is only for ordinary V/F, simple vector efficient.	0~200%	100%	×
F4.15	Slip compensation mode	0: Invalid 1: Low frequency compensation Note: This parameter is only valid for advanced V/F	0~1	0	×
F4.16	Motor parameter self-learning	0: Invalid 1: Static self-learning (STAR is displayed immediately when it starts and END is displayed when it ends. Goes off after 1S.)	0~1	0	×
F4.17	Motor stator resistance	After changing the motor rated power F4.17, F4.01, F4.02, F4.04, F4.05, F4.18~F4.20 are automatically updated to the corresponding function The default parameters for motors with different speeds.	0.00~200.00Ω	model setting	o
F4.18	Motor rotor resistance		0.00~200.00Ω	model setting	o
F4.19	Motor stator and rotor feel		0.00~200.00mH	model setting	o
F4.20	Motor stator and rotor leakage feel		0.00~200.00mH	model setting	o
F4.21	Speed ring (ASR1) Proportional gain	Function codes F4.21~F4.26 are valid in vector control mode. By setting the proportional gain P and the integral time I, the vector Speed response characteristics of quantity control.	1~100	30	×
F4.22	Speed ring (ASR1) Integration time		0.01~10.00S	0.50	O
F4.23	switch low frequency		0.0~10.0Hz	5.0	×
F4.24	Speed ring (ASR2) Proportional gain		1~100	20	O
F4.25	Speed ring (ASR2) Integration time		0.01~10.00S	1.00	O
F4.26	switch high point frequency		F4.23~ 320.0Hz	10.0	×
F4.27	Vector slip compensation	In vector control mode, this parameter is used to adjust the steady speed of the motor. Accuracy. When the motor is overloaded and the speed is low, increase this parameter. Otherwise, reduce this parameter.	50%~200%	100	O
F4.28	Speed loop filtering Interval constant	Set the speed loop filter time constant	0.000~1.000S	0.010	O
F4.29	reserved	-	-	0	◆
F4.30	Speed loop torque limit Certainly	The setting value is a percentage of the motor rated current.	0.0%~200.0%	170.0	O
F4.31 Torque command selection		0: Keyboard number setting 1: AI 2: Keep	0~2	0	×
F4.32	Torque digital setting	This setting value is the percentage of the motor rated current	0.0%~200.0%* Motor rated current	150.0	O

F4.33	Torque control forward High	Used to set the forward or reverse direction of the inverter under torque control mode.	0.0~3200.0Hz 0.	50.0	O
F4.34	frequency torque control reverse Maximum operating frequencyHigh frequency		0~3200.0Hz 0.	50.0	O
F4.35	Torque rise time	The torque rise/fall time defines the time from when the torque rises from 0 to the maximum value.	00~1.00S	0.00	O
F4.36	Torque drop time	Or the time it takes to drop from a maximum value to 0.	0.00~1.00S	0.00	O

F5 Group - Protection function parameters

Function code	name	Setting range	Minimum unit	Factory settings	changed
F5.00	protection setting	LED units digit: Motor overload protection selection 0: Invalid 1: Valid LED tens digit: PID feedback disconnection protection 0: Invalid 1: Protection action and free stop LED hundreds digit: 485 communication failure processing 0: Protection action and free stop 1: Alarm but maintain current operation 2: Alarm and shut down according to the set method LED thousands digit: oscillation suppression selection 0: Invalid 1: Valid	0000~1211	0001	×
F5.01	Motor overload protection system number	The motor overload protection factor is the ratio of the motor rated current to the inverter rated current.The percentage of the rated output current value.	30%~110%	100%	×
F5.02	Undervoltage protection level	This function code specifies that when the inverter is working normally, the DC The lower limit voltage allowed for the busbar.	50~280/50~480V 180/360V		×
F5.03	Deceleration voltage limiting system number	This parameter is used to adjust the inverter's ability to suppress overvoltage during deceleration. ability.	0: Off, 1 to 255	1	×
F5.04	Overvoltage limit level	The overvoltage limit level defines the action voltage of overvoltage stall protection.	350~400/660~850V	375/700V	×
F5.05	Acceleration current limiting system number	This parameter is used to adjust the inverter's ability to suppress overcurrent during acceleration ability.	0: Off, 1 to 99	10	×
F5.06	Constant speed current limiting system number	This parameter is used to adjust the inverter's ability to suppress overcurrent during constant speed operation ability.	0: Off, 1 to 10	0	×
F5.07	Current limit level	The current limit level defines the current threshold for automatic current limiting action. The setting value is a percentage of the inverter's rated current.	50%~200%	160%	×
F5.08	Feedback disconnection detection value	This value is the percentage of the PID given value. When the PID feedback value continues When it is less than the feedback disconnection detection value, the inverter will Set and make corresponding protection actions. It is invalid when F5.08=0.0%.	0.0~100.0%	0.0%	×
F5.09	Feedback disconnection detection between	Delay time before protection action after feedback disconnection occurs.	0.1~999.9S	10.0s	×
F5.10	Inverter overload prediction Police Level	The current threshold of the inverter overload warning action is set to The percentage relative to the rated current of the inverter.	0~150%	120%	O
F5.11	Inverter overload prediction Alarm Delay	The inverter output current is continuously greater than the overload warning level (F5.10), the delay time between the output of overload pre-alarm signal.	0.0~15.0s	5.0s	×
F5.12	Jog priority enable	0: Invalid 1: When the inverter is running, the jog priority is the highest	0~1	0	×

F5.13	Oscillation suppression coefficient	When the motor vibrates, you need to set F5.00 thousandth place to be valid and turn on the vibration.The oscillation suppression function can be adjusted by setting the oscillation suppression coefficient.	0~200	30	O
F5.14	Amplitude suppression coefficient	Generally speaking, the larger the oscillation amplitude, the greater the oscillation suppression coefficient.	0~12	5	O
F5.15	Oscillation suppression lower frequency limit Rate	F5.13, F5.14~F5.16 do not need to be set; if you encounter special scenes Suitable, need to be used together with F5.13 ~ F5.16.	0.0~F5.16	5.0Hz	O
F5.16	Oscillation suppression upper frequency limit Rate		F5.15 ~F0.05	45.0Hz	O
F5.17	Wave-by-wave current limiting selection	LED units digit: Select in acceleration 0: Invalid 1: Valid LED tens digit: deceleration selection 0: Invalid 1: Valid LED hundreds place: constant speed selection 0: Invalid 1: Valid LED thousands digit: dead zone compensation selection 0: Invalid 1: Valid	000~1111	1011	×
F5.18	Output phase loss protection detection Coefficient of measurement	Note: Dead zone compensation is only valid when F0.01 is selected as 3 or 4. The ratio of the maximum value to the minimum value of the three-phase output current is greater than this If the coefficient lasts for more than 6 seconds, the inverter will output Current imbalance fault EPLI, this parameter cannot be set too small, it is recommended It is recommended to set it above 2.00; when F5.18=0.00, output phase loss protection is disabled.effect.	0.00~20.00	0.00	O
F5.19	Instantaneous power failure frequency Drop coefficient	Set the frequency reduction coefficient for instantaneous power failure	0: Instantaneous stop without stopping function invalid 1~9999	0	O
F5.20	Momentary power failure and frequency reduction point	Set the instantaneous power-off frequency reduction point	220V:180~330V 250V 380V:300~550V 450V	Model settings	×
F5.21	Low frequency carrier automatic Adjustment	0: Invalid 1: Valid	0ÿ1	1	×

Group F6 - Communication Parameters

Function code	name	Set the local	the minimum unit	factory setting	Change
F6.00	Local address	address in the range , 0 is the broadcast address.	0~247	1	×
F6.01	MODBUS communication configuration	LED units digit: baud rate selection 0:9600BPS 1:19200BPS 2: 38400BPS LED tens digit: data format 0: No checksum 1: Even parity 2: Odd parity LED hundreds place: communication response mode 0: Normal response 1: Only respond to the slave address 2: No response 3: Free stop command from slave to master in broadcast mode No response LED thousands digit: reserved	0000~0322	0000	×

F6.02	When communication timeout is detected between	If the machine does not If the correct data signal is received, the machine will think that communication has occurred.Fault, the inverter will make a decision based on the setting of the communication failure action mode.Determine whether to protect or maintain the current status; when this value is set to 0.0,No RS485 communication timeout detection is performed.	0.1~100.0s	0.0s	×
F6.03	Local response delay	This function code defines the end of receiving the inverter data frame and sends it to the upper bit. The time interval between the machine sending the responsedata frame, if the response If the time is less than the system processing time, the system processing time shall prevail	0~200ms	5ms	×
F6.04	Proportional linkage coefficient	This function code is used to set the inverter as a slave through RS485 The weight coefficient of the frequency command received by the interface, the actual operation of the machine The line frequency is equal to the function code value multiplied by the value of the RS485 interface. The received frequency setting command value. In the linked control, this function The code can set the ratio of the operating frequencies of multiple inverters.	0.01~10.00	1.00	O
F6.05	Reserved	-	-	0	×

F7 Group - Supplementary Function Parameters

Function code	name	Setting range	Change of the minimum unit	factory setting	change
F7.00	Counting and timing mode	LED units digit: count arrival processing 0: Single cycle counting, stop output 1: Single week counting, continue output 2: Loop counting, stop output 3: Loop counting, continue output LED tens digit: reserved LED hundreds place: timing arrival processing 0: Single-cycle timing, stop output 1: Single-week timing, continuous output 2: Cycle timing, stop output 3: Loop timing, continue output LED thousands digit: reserved	000~303	103	×
F7.01	Counter reset value setting	Set the counter reset value	【F7.02】～9999	1	O
F7.02	Counter detection value setting	Set the counter detection value	0～【F7.01】	1	O
F7.03	Timing time setting	Set the timing time	0～9999s	0s	O
F7.04~ F7.07	reserve	-	-	0	O
F7.08	Swing frequency control	0: Disable 1: Valid	0~1	0	×
F7.09	swing control	0: Fixed swing The reference value of the swing amplitude is the maximum output frequency (F0.04). 1: Variable swing The reference value for the swing is the given channel frequency.	0~1	0	×
F7.10	Swing frequency stop-start mode choose	0: Start according to the state memorized before shutdown 1: Restart	0~1	0	×
F7.11	Swing frequency amplitude	The swing frequency amplitude is relative to the maximum output frequency (F0.04).percentage.	0.0~100.0%	0.0%	O
F7.12	Jump frequency	This function code means that when the frequency reaches the upper limit of the swing frequency,The rapid decrease after the frequency limit, of course, also refers to the frequency reaching After reaching the lower limit of the swing frequency, the amplitude of the rapid rise.For the percentage of the swing frequency amplitude (F7.11), set it to 0.0% There is no jump frequency.	0.0~50.0%	0.0%	O

F7.13	Swing frequency rise time:	The running time from the swing frequency lower limit frequency to the swing frequency upper limit frequency.	0.1~3600.0s	5.0	O
F7.14	Swing frequency falling time:	the running time from the swing frequency upper limit to the swing frequency lower limit.	0.1~3600.0s	5.0	O
F7.15	Swing frequency upper limit frequency delay	Set the upper and lower frequency limit delay of the swing frequency.	0.1~3600.0s	5.0	O
F7.16	Swing frequency lower limit frequency delay		0.1~3600.0s	5.0	O

F8 Group - Management and Display Parameters

Function code	name	Setting range	Change of the minimum unit	factory setting	
F8.00	Main parameters of operation monitoring Item Selection	For example: F8.00=2, that is, select output voltage (d-02), then The default display item on the main monitoring interface is the current output voltage value.	0~31	0	O
F8.01	Main parameters of shutdown monitoring Item Selection	For example: F8.01=3, that is, select bus voltage (d-03), then The default display item of the main monitoring interface is the current bus voltage value.	0~31	1	O
F8.02	Run auxiliary display (only Valid for dual display)	For example: F8.02=4, that is, select output current (d-02), then The default display item on the main monitoring interface is the current output voltage value.	0~31	4	O
F8.03	Stop auxiliary display (only Valid for dual display)	For example: F8.03=3, that is, select bus voltage (d-03), then The default display item of the main monitoring interface is the current bus voltage value.	0~31	3	O
F8.04	Motor speed display coefficient	Used to correct the speed scale display error, has no effect on the actual speed ring.	0.01~99.99	1.00	O
F8.05 parameter initialization		0: No operation The inverter is in normal parameter reading and writing state. Function code Set value. Whether it can be changed depends on the setting status of the user password and the current status of the inverter. It is related to the working status. 1: Restore factory settings All user parameters are restored to factory settings according to the model. 2: Clear fault records Clear the contents of the fault records (d-19 to d-24) After the operation is completed, this function code is automatically cleared to 0.	0~2	0	×
F8.06 Reserved		-	0	0	×

Group F9 - Factory Parameters

Function code	name	Setting range	Change of the minimum unit	factory setting	change
F9.00	Manufacturer password	1~9999	1	****	◇

Group d - Monitoring parameter group

Function code	name	scope	Change of the minimum unit	factory setting	
d-00	Output frequency (Hz)	0.0~999.9Hz	0.1Hz	0.0Hz	◆
d-01	Set frequency (Hz)	0.0~999.9Hz	0.1Hz	0.0Hz	◆
d-02	Output voltage (V)	0~999V	1V	0V	◆
d-03	Bus voltage (V)	0~999V	1V	0V	◆
d-04	Output current (A)	0.0~999.9A	0.1A	0.0A	◆
d-05	Motor speed (rpm)	0~60000rpm	1rpm	Model settings	◆
d-06	Analog input AI (V/mA)	0.00～10.00V/0.00～20.00mA	0.01V/0.01mA	0.00V/mA	◆
d-07	Reserved	-	0	0	◆
d-08	Analog input AO (V/mA)	0.00～10.00V/0.00～20.00mA	0.01V/0.01mA	0.00V/mA	◆
d-09	Reserved	-	-	0	◆

d-10	PID pressure setting value	0.00～10.00V/0.00～99.99(MPa、Kg)	0.01V/(MPa, Kg)	0.00V/(MPa, Kg)	◆
d-11	PID pressure feedback value	0.00～10.00V/0.00～99.99(MPa、Kg)	0.01V/(MPa, Kg)	0.00V/(MPa, Kg)	◆
d-12	Current count value	0～9999s	1s	0s	◆
d-13	Current timing value (s)	0～9999s	1s	0s	◆
d-14	Input terminal status (X1-X4)	0~FH	1H	0H	◆
d-15	Output status (R)	0～1H	1H	0H	◆
d-16	Module temperature (°C)	0.0～132.3℃	0.1℃	0.0	◆
d-17	Software upgrade date (year)	2010~2026	1	2023	◆
d-18	Software upgrade date (month, day)	0~1231	1	0109	◆
d-19	Second fault code	0 to 19	1	0	◆
d-20	The most recent fault code	0~19	1	0	◆
d-21	The most recent fault Output frequency (Hz)	0.0~999.9Hz	0.1Hz	0.0Hz	◆
d-22	the most recent fault occurs Output current(A)	0.0~999.9A	0.1A	0.0V	◆
d-23	The most recent fault Line voltage (V)	0~999V	1V	0V	◆
d-24	The most recent fault mode Block temperature (℃)	0.0~132.3℃	0.1℃	0.0℃	◆
d-25	Accumulated inverter operation time Room (h)	0~9999h	1h	0h	◆
d-26	Inverter status	0~FFFFH BIT0: Run/Stop BIT1: Reverse/Forward BIT2: Inching BIT3: DC braking BIT4: Reserved BIT5: Overvoltage limit BIT6: Constant speed reduction BIT7: Overcurrent limit BIT8~9: 00-zero speed/01-acceleration/10-deceleration/11-constant speed BIT10: Overload pre-alarm BIT11: Reserved BIT12~13 operation command channel: 00-panel/01-terminal/10-reserved BIT14~15 bus voltage status: 00-normal/01-low voltage protection /10-Overpressure protection	1H	0H	◆
d-27	software version	1.00~99.99	0.01	2.00	◆
d-28	power model	0.10~99.9KW	0.01KW	Model settings	◆
d-29	Motor estimated frequency	0.0~Maximum output frequency F0.04 Note: The motor operating frequency calculated based on the estimated speed of the motor	0.1Hz	0.0Hz	◆
d-30	Output torque	-200~+200%	1%	0%	◆
d-31	Input voltage (V)	0~999V	1V	0V	◆

Group E - Fault Codes

Fault code	name	Possible cause of the fault	Troubleshooting	code name
E0C1	Overcurrent during acceleration operation	acceleration time is too short	Extend the acceleration time	1

		The inverter power is too small	Choose a frequency converter with a large power level	
		Improper V/F curve or torque boost settings	Adjust V/F curve or torque boost	
E0C2	Overcurrent during deceleration operation	The deceleration time is too short.	Extend the deceleration time	2
		The inverter power is too low.	Choose a frequency converter with a large power level	
E0C3	Overcurrent during constant speed operation	The grid voltage is too low.	Check the input power	3
		The load is suddenly or abnormally generated.	Check the load or reduce the load surge	
		The inverter power is too small	Choose a frequency converter with a large power level	
EHU1	Overvoltage during acceleration operation	Abnormal input voltage	Check the input power	4
		Restarting a rotating motor	Set to start after DC braking	
EHU2	Overvoltage during deceleration operation	Deceleration time is too short	Extend the deceleration time	5
		Abnormal input voltage	Check the input power	
EHU3	Overvoltage	input voltage abnormality during constant speed operation	Check the input power	6
EHU4	Overvoltage during shutdown	Abnormal input voltage	Check the power supply	7
ELU0	undervoltage during operation	Abnormal input voltage or relay not energized	voltage or seek service from the manufacturer.	
ESC1	power module fault	Inverter output short circuit or grounding	Check motor wiring	9
		Inverter instantaneous overcurrent	See Overcurrent Countermeasures	
		Abnormal control panel or severe interference	Seek service from the manufacturer	
		Power device damage	Seek service from the manufacturer	
E-OH	Radiator overheating	Ambient temperature is too high	Lower the ambient temperature	10
		Fan damage	Replace the fan	
		Air duct blockage	Clear the air ducts	
EOL1	Inverter overload	Improper V/F curve or torque boost settings	Adjust V/F curve and torque boost	11
		Grid voltage is too low	Check the grid voltage	
		The acceleration time is too short	Extend the acceleration time	
		the motor load is too heavy.	Choose a more powerful inverter	
EOL2	Motor overload	Improper V/F curve or torque boost settings	Adjust V/F curve and torque boost	12
		Grid voltage is too low	Check the grid voltage	
		The motor is stalled or the load is suddenly too large.	Check the load	
		The motor overload protection factor is set incorrectly	Correctly set the motor overload protection factor	
E-EF	External device fault	External device fault input terminal closed	Disconnect the external device fault input terminal and clear Troubleshooting (pay attention to check the cause)	13
EPOF	Dual CPU communication failure	CPU communication failure	Seek service from the manufacturer	14
EPID	PID feedback disconnection	PID feedback circuit is loose	Check feedback wiring	15
		The feedback amount is less than the disconnection detection value	Adjust the detection input threshold	
E485	RS485 communication failure	The baud rate does not match that of the host computer.	Adjust the baud rate	16
		RS485 channel interference	Check whether the communication line is shielded and the wiring is Is it reasonable? If necessary, consider and filter Wave Capacitance	
		Communication timeout	Retry	
ETUN	motor tuning failure.	Motor parameter setting error.	Reset motor parameters	17
ECCF	current detection fault	Current sampling circuit failure	Seek service from the manufacturer	18
		Auxiliary power failure		
EEEP	EEPROM read/write error	EEPROM fault	Ask the manufacturer for service	19
EPLI	output phase loss protection	Output U, V, W has phase loss	and check the output wiring	20
EPAO	burst pipe failure	Feedback pressure is less than the low pressure detection threshold or greater than or equal to the high pressure detection feedback connection or adjust the detection high and low pressure		22

		Measurement threshold	Threshold	

6. Macro parameter setting instructions

Function macro definition	setting parameters	automatically modify parameter list	Debugging steps, terminal wiring
Single pump constant pressure water supply model	F0.00=1	F0.02=1;F0.06=20.0; F3.00=1021;F3.01=5.0; F3.12=5.0;F8.00=11; F8.01=11; F8.02=10; F8.03=10.	Step 1: Determine the sensor feedback type. The AI factory default input voltage feedback signal (AVI) can also be set by dialing Switch selects input current feedback signal (ACI); Step 2: Terminal wiring, if the pressure gauge is 0~10V input Connect the signal line of the pressure gauge to AI, and the other two The root wire is connected to +10V and GND; if the output is 0~20mA, connect the pressure gauge signal line to AI, and the other The line is connected to 10V; Step 3: Initialize parameters (F8.05=1); Step 4: Set the sensor range (F3.18); Step 5: Set the target pressure, which can be set through parameter F3.01 or through the up and down keys on the keyboard.
Engraving machine mode	F0.00=4	F0.02=1;F0.04=400.0; F0.05=400.0; F1.17=100.0;F1.18=150.0; F1.19=200.0;F1.20=250.0; F1.21=300.0;F1.22=350.0; F1.23=400.0;F2.15=13; F2.16=14; F2.17=15; F2.19=1; F4.03=400.0.	Step 1: Connect the terminal wiring, the two wires of the switch (control start and stop) are connected to X1 and GND; Step 2: Parameter initialization (F8.05=1); Step 3: Function macro selection (F0.00=4).

7. Certificate of Conformity

This product has been inspected and found to meet quality standards and is approved for shipment.

Printed Certificate of Conformity